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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SEDIGHIAN, REZA

ART UNIT

PAPER NUMBER

2633

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Please find below and/or attached an Office communication concerning this application or proceeding.

13

Office Action Summary	Application No. 09/902,944	Applicant(s) FRIGO ET AL.	
	Examiner M. R. Sedighian	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/11/01</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. Claims 1 and 3-4 are objected because of the following informalities:

- a) In claim 1, the word “arena” in line 2, should change to ---area---.
- b) In claim 3, the word “arena” in line 2, should change to ---area---.
- c) In claim 4, the word “arena” in line 2, should change to ---area---.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2 and 7-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claim 2, specification does not clearly describe about writing data onto the optical chalkboards when permitted by the control signals. Specification describes (page. 7, last line and page 8, lines 1-2) a protocol establishes through control bits, whether or not user N can seize the chalkboard for modulating upstream data. Specification does not clearly describe how control signals permit writing data onto optical chalkboard signals. Furthermore, as to claim 10, specification does not clearly describe about determining when control signals permit writing of data. Thus specification fails to enable a person skilled in the art to make and use the invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, the limitation "each WGR" in line 1, and "said WGR's distribution side port" in line 2, lacks antecedent basis. Furthermore, it is not clear what it means by "... after exiting said WGR's distribution side port, if said light of said wavelength re-enters an adjacent distribution side port, said light of said wavelength will emerge on a port adjacent to said WDM fiber optical feeder ring". What does it mean by after exiting WGR's distribution side port, if light of said wavelength re-enters an adjacent distribution side port?? Which port is the adjacent distribution side port?? Which port is the port that is adjacent to the WDM fiber feeder ring??

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-5, 7-9, and 12-13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6, 7, 8, 9, 13, 15 and 16 of copending Application No. 09/902,806. Although the conflicting claims are not

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identical, they are not patentably distinct from each other because both application claim a method for communicating information over WDM fiber optical ring network in a metro access area using one or more wavelengths which can be shared by a plurality of user terminals, comprising the steps of: sending one downstream data packet; sending optical chalkboard packet consisting of recognizable pattern; and sending a control signal.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by MacKinnon et al. (US Patent No: 6,366,373).

Regarding claim 1; MacKinnon teaches a method for communicating information over a WDM fiber optical ring network architecture (10, fig. 1) in a metro access area using one or more wavelengths (col. 3, lines 1-7), which can be shared by a plurality of user terminals (20, 22, 24, 26, fig. 1) each user terminal coupled to an end station (for example, nodes 20, 22, 24, 26 can be coupled to end stations through data lines 28 and 30) comprising the steps of: sending at least one downstream data packet (110, fog. 10); sending at least one optical chalkboard packet (112,

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fig 10) consisting of a recognizable pattern (col. 3, lines 65-67, col. 4, lines 1-25); and sending a control signal (114, fig. 10).

10. Claims 3-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Koehler (US patent No: 6,426,815).

Regarding claim 3, Koehler teaches a method for communicating over a WDM fiber optical ring network architecture (110, fig. 1) in a metro access area (100, fig. 1) by sending WDM signals (col. 1, lines 4-7, col. 2, lines 15-17) by a network node (116, fig. 1) along a WDM fiber optical feeder ring (120, fig. 1) to access nodes (122, 124, 126, 128, fig. 1) implemented with optical add-drop multiplexers (112, 114, 116, 118, fig. 1 and col. 2, lines 50-67; col. 3, lines 1-15).

Regarding claim 4, Koehler teaches a network ring architecture (110, 120, fig. 1) as discussed above in claim 3. Koehler teaches optical add-drop multiplexers (116, 118, fig. 1 and 116, 118, 222, 234, 216, 250, fig. 2). Koehler further teach the add-drop multiplexers can be a waveguide grating router (col. 3, lines 30-34).

Regarding claim 5, Koehler teaches light entering an input port of one of the OADM from the WDM fiber ring (light enters an input port of interface 116 from fiber ring 100, as it is shown in fig. 2); and demultiplexing (222, fig. 2) the light according to the lights wavelength (col. 3, lines 30-34).

Regarding claim 6, as it is understood in view of the above 112 problem, Koehler further teaches the WGR has a routing scheme (col. 3, lines 33-34) and after exiting a WGR's distribution side port (col. 3, lines 35-40), light re-enters an adjacent distribution side port (note

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that light outputted by WGR 222 propagates along the fiber ring 120 and enters to an input port of an adjacent node such as node 120, or to an adjacent distribution side port of node 120).

11. Claims 3 is rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (US Patent No: 6,616,349).

Regarding claim 3, Li teaches a method for communicating over a WDM fiber optical ring network architecture (10, fig. 2) in a metro access area (20, fig. 2) by sending WDM signals ($\lambda_1, \lambda_2, \lambda_3, \lambda_4$, fig. 3) by a network node (50, fig. 2) along a WDM fiber optical feeder ring (30, fig. 2) to access nodes (21, 22, fig. 2) implemented with optical add-drop multiplexers (50, figs. 2, 3).

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 2 and 11-13 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacKinnon et al. (US Patent No: 6,366,373) in view of Al-Salameh et al. (US Patent No: 6,766,113).

Regarding claim 2, as it is understood in view of the above 112 problem, MacKinnon teaches reading by the end station data packets addresses to the end station (col. 4, lines 1-3), and writing data onto the optical chalkboards when permitted to do so by the control signals (col. 4, lines 12-25). MacKinnon differs from the claimed invention in that MacKinnon does not disclose

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passing packets not addressed to the end station through semiconductor optical amplifiers (SOAs). However, it is well known to incorporate optical amplifiers along the fiber lines to boost the signal strength. Al-Salameh teaches optical amplifiers (210-1, 210-2, 310-1, 310-2) that are placed along the lines (110, 210, figs. 1, 2) of a ring network (100, fig. 1). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate optical amplifiers such as the ones of Al-Salameh along the fiber lines in the ring network of MacKinnon in order to boost the signal strength and to improve overall transmission performance.

As to claims 11-13, MacKinnon differs from the claimed invention in that MacKinnon does not specifically disclose the steps of exiting of light carrying data packet from an end station, re-entering an access node of light carrying data via a WDM fiber, and continuing onto a WDM fiber optic feeder ring to a next node. However, MacKinnon teaches an optical fiber ring (10, fig. 1) that is comprised of a plurality of nodes, or access nodes, or network nodes (20, 22, 24, 26, fig. 1), wherein optical data packets can be exited through output data lines (30, fig. 1) to other terminals, or end stations, and data signals from end stations can be added to the network, through data input lines (28, fig. 1) for further transmission along the ring network to a next node. Therefore, it would have been obvious to an artisan at the time of invention that in an optical data transmission ring network, such as the one of MacKinnon, optical data signals can exit from an end station (for example an end station that can be connected to node 26), and can be re-entered to an access node (for example, light can be re-enter to an access node such as node 20) via a WDM fiber (via fiber 18) and can transmitted onto to the next node via the WDM fiber

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ring (light signal further enters the next node 22 via fiber 12) in order to direct data to a plurality of different destinations.

14. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US Patent No: 6,616,349) in view of Koehler (US Patent No: 6,426,815).

Regarding claim 4, Li teaches a method for communicating WDM signals in a ring network (10, 20, 30, fig. 2) as discussed above in claim 3. Li differs from the claimed invention in that Li does not disclose the add-drop multiplexers are waveguide grating routers. Koehler teaches add-drop multiplexers waveguide grating routers (col. 3, lines 30-33 and 112, 116, 222, fig. 2). Therefore, it would have been obvious to an artisan at the time of invention to incorporate add-drop multiplexers waveguide grating routers such as the ones of Koehler for the add-drop multiplexers in the ring network of Li in order to add or extract a channel of the WDM optical beam for further signal transmission or signal processing.

Regarding claim 5, Li teaches light entering an input port of one of the OADM (50, fig. 2) from the WDM fiber ring (30, fig. 2), and demultiplexing the light according to the lights wavelength (50, 51, 53a, 54a, 55a, 56a, fig. 3).

Regarding claim 6, as it is understood in view of the above 112 problem, Li further teaches the WGR has a routing scheme and after exiting a WGR's distribution side port, light re-enters an adjacent distribution side port (note that light outputted by interface 50 propagates along the fiber ring 20 and enters to an input port of an adjacent node such as nodes 23, 21, or to an adjacent distribution side port of node 21).

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15. Claims 7-9 and 14-21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


M. R. SEDIGHIAN
PRIMARY EXAMINER